REMEDIAL PROJECT MANAGERS' MEETING MINUTES
NASA/JET PROPULSION LABORATORY
20 JANUARY 1994

Attendees: Organizations represented at the Remedial Project Managers (RPMs') meeting included the following:

- U.S. EPA (EPA)/Federal Enforcement Branch, Region 9, San Francisco, CA
- California EPA/Department of Toxic Substances Control (DTSC), Region 3
- NASA, NASA Resident Office, Jet Propulsion Laboratory
- Los Angeles Area California Regional Water Quality Control Board (RWQCB)
- Jet Propulsion Laboratory, Contractor to NASA
- EBASCO Environmental, Contractor to JPL

A list of individuals attending this RPM meeting is attached to these minutes.

OBJECTIVE:

The purpose of the NASA/Jet Propulsion Laboratory meeting held on 19 January 1994 at the Jet Propulsion Laboratory in Pasadena, California, was to discuss the agencies' comments on the Field Sampling and Analysis Plan for OU-3.

1. TOPIC: EPA RPM TRANSITION

Schutz is transitioning off this project and will be replaced by Brian Swarthout. This is her last meeting. She and Swarthout will work together and she will be available for future meetings, as necessary.

2. TOPIC: Status on Draft/Final Documents

Community Relations Plan: Schutz mentioned some outstanding but minor items. She considers the document final except that the definition of JPL should be clarified: JPL was identified incorrectly on pages 3-8, 6-15, and 6-16 in contradiction of the definition specified in Section 1.1.

Action: Replacement pages will be transmitted to the EPA by January 26, 1994.

Work Plan: EPA and LARWQCB have no further comments. The document can go final pending confirmation that the DTSC has no further comments.

Action: Nakashima will check on status of the Work Plan and call Buril on 20 January 1994.

Field Sampling and Analysis Plan for OU-1: Schutz commented on the first sentence in Section 4.1, p. 6 under "Monitoring of Locations." She stated that results from on-site, as well as off-site, wells should be taken into consideration when setting background levels. Noting this in the meeting minutes is sufficient. No change to the document is necessary.

Schutz commented on Section 6.2.7, p.35 and 36 under "Field QA/QC Samples." NASA agreed that the meeting minutes will note that, although there is no intention to collect background samples outside of the normal sampling regime, 10% data validation will be performed on any background samples collected as a separate sampling event. No change to the document is necessary.

Field Sampling and Analysis Plan for OU-2: EPA and RWQCB have no further comments. The document can go final pending confirmation that the DTSC has no further comments.

Action: Nakashima will check on status of FSAP-OU2 and call Buril on 20 January 1994.

Health and Safety Plan: EPA and RWQCB have no further comments. The document can go final pending confirmation that the DTSC has no further comments.

Action: Nakashima will check on status of HASP and call Buril on 20 January 1994.

Quality Assurance Project Plan: There are no further comments. The document is final.

3. TOPIC: Agency Comments on Field Sampling and Analysis Plan for OU-3

EPA Comments:

Buril agreed, in the Response Document, to Schutz's request to identify the locations in the Quality Assurance Project Plan (QAPP) where changes were made; as EPA's comments on FSAP-OU3 were based on a previous version of the QAPP.

- General Comment #1: Buril noted that Well #6 is now in place and Well #14 will be installed. NASA agreed that if contaminants are found in Well #6 and Well 14,

installation of step out wells will be discussed with the agencies.

- General Comment #2: The criteria that will be used to decide where QA samples will be taken will be included in the document.

- General Comment #3: The bulk of Comment 3 is related to use of an older version of the QAPP and will be addressed in the Response Document.

  Stralka noted that having both pre- and post-digestion spikes will allow calculation of the true efficiency of the method. Buril will discuss with NASA, EBASCO, and the Laboratory and get back to EPA. Schutz noted that EPA should be included in these discussions. This issue will also affect FSAP-OU-1. Schutz stated that a letter to the agencies reflecting the change would be acceptable. It is not necessary to change the OU-1 document.

- Specific Comment #1: A brief description of the proposed activities for OU-3 will be added in Section 2.0, Introduction.

- Specific Comment #2: NASA will do a case-by-case evaluation of compounds to evaluate whether they could have come from JPL and will document this evaluation. Stralka stated that when ground water is treated, it must be treated for all contaminants regardless of their origin. Other hydrologic parameters to be investigated during OU-3 will be identified.

- Specific Comment #3: JPL will change the title to "Summary of Goals for OU-3." A section will be added to FSAP-OU3 that discusses how all data from OU-1, OU-2, and OU-3 comes together.

- Specific Comment #4: NASA will explore ways to add the information to Figure 4-10 requested by EPA. Changing to a larger size will probably be necessary.

- Specific Comment #5: This is the result of comments made using the older version of the QAPP and will be clarified.

- Specific Comment #6: Table 4-4 will be modified to address the comments.

- Specific Comment #7: Language will be added to indicate that equivalent methods with appropriate detection limits will be used. TPH will be deleted from Table 4-4 to

agree with the text. The QAPP will be included in Section 8.0.

- General Comment in #8:

  Paragraph 1: Schwarthout stated that since there is no reason to believe that NASA disposed of chemicals off-site, there is no need to do this sampling.

  Paragraph 2: Table 4-4 will be modified to address the comment.

  Re the reminder by EPA that regional guidance specifies a 10% frequency while the QAPP specifies 5%: This is a result of using the older version of the QAPP for comments. This will be addressed in the Response Document.

  Re the recommendation that the collection frequency and analytical parameters for equipment blank samples should be reevaluated: It was concluded that anion/cation analyses are not necessary for equipment blanks.

  Re an apparent contradiction in the QAPP between Table 9.2 and Section 5.2.3: JPL will verify whether such a contradiction indeed exists in the final version of the QAPP. Schutz based comments on an old version.

  Location for QA/QC samples will not be identified in the document, but rationale for selection of locations will be described.

- Specific Comment #9: This comment is considered inappropriate because it was based on an old version of the QAPP. Only one laboratory is being used for soil vapor analysis.

- Specific Comment #10: Sieve analyses were done during the ESI in order to design wells. These past analyses will be reviewed along with any new data in the RI. Schwarthout noted that the field geologists should have the option to run a sieve analysis, if needed. NASA may want to run a few more sieve analyses, but it is not necessary to add this to the document.

Action: Buril will discuss with NASA and get back to Schwarthout.

Temporary storage for drill cuttings during OU-3 will be at the rig during drilling and then will be moved to a secure area within the laboratory. This will be noted in the document.

- Specific Comment #11: (Re Paragraph 1) Cutler explained how the location of well screens is determined. NASA will explore how to clarify screen placement for the public.

Action: Buril will get back to EPA on this.

Re first bullet: This section will be revised to include the procedures of assessing depth to crystalline basement rocks. The well boring will be advanced 10-15 feet into the basement rock to assure that the boring is not being terminated in a boulder or larger erratic portion of basement material within the sediments. Description of how basement rock can be recognized will be included.

Re second bullet: The section will be reworded to address EPA's concern.

Action: NASA will provide rewrite within a few weeks.

Re third bullet: NASA will clarify in the text how the casing and screen sections will be joined.

Re page 16, first full bullet, line 1: NASA will revise the text to state that the casing will be hung in the well bore and not placed on the bottom of the borehole during backfilling with construction materials. In addition, NASA will clarify text to state that if the well bore is overdrilled, it will be backfilled with a low-permeability material, such as a bentonite mixture or grout.

Re page 16, first full bullet, line 5: NASA requested written guidance concerning the use of sand as backfill material adjacent to the blank casing.

Action: RWQCB agreed to fax the pertinent sections to JPL ASAP to supply written guidance. Also, Buril will meet with EBASCO and NASA to do a cost and schedule analysis and will get back to EPA within two weeks.

- Specific Comments #12: # Figure 6-5, Design of Typical Deep Multi-port Groundwater Monitoring Well. The discussion of page 16, first full bullet, line 5 (above) also applies to Comment #12.

- Specific Comment #13: Section 6.1.2.3, Well Development Procedures, page 16, first paragraph: To address EPA's concern about using water jetting as a development method and the suggestion that the well be developed by surging, bailing, and pumping methods, NASA had planned to use

surging, bailing, and pumping and will clarify this in the text.

Re Page 17, second paragraph, line 7: The text is acceptable. However, the LARWQCB stated that the NTU reading for the samples must be in the acceptable range in order for those results to be considered valid.

- Specific Comment #14: Section 6.2, Groundwater Sampling, page 19: NASA does not agree that text should be added to this section to define the data quality objectives. This information has been incorporated in the Work Plan and thus does not need to be added to the FSAP. Such a change would require changes in other documents. It was agreed that no change be made.

- Specific Comment #15: Section 6.2.5, Collection of Groundwater Samples, page 22: (First paragraph, first sentence) EPA indicates that the text/table must be modified to clarify inconsistencies regarding TPH and TDS analyses. JPL agrees to edit Table 4-4 and remove TPH in order to make it consistent with the text.

  Third paragraph, first sentence: EPA requests that the text be corrected to indicate that unfiltered samples will be collected, and NASA agrees to plug in the same text that appears in OU-1 regarding filtered and unfiltered samples.

- Specific Comment #16: Section 6.3.1, Data Quality Objectives, page 22: EPA requests additional text in this section that would present data quality objectives. NASA will confirm that DQOs are clearly called out in the Work Plan. If so, the title of Section 6.3.1 will be changed to "Analytical Methods and Quality Assurance." If DQOs have not been clearly defined in the Work Plan, text will be added to FSAP-OU3. EPA also requests that this section include the data package level that will be requested for cyanide analysis performed on the composite soil cuttings samples as shown in Table 4-4. If cyanide analysis will be performed, Table 4-4, Section 6.3.5, and Table 6-5, EPA requests revisions to eliminate the inconsistencies. NASA agrees to make these items consistent with OU-1.

- Specific Comments #17: Section 6.3.5, Collection of Soil Cuttings and Drilling Fluid Samples, page 23. EPA requests that NASA present the rationale behind the current drilling mud analysis procedures in the text. NASA will make it clear in the text that mud is not being sampled during drilling.

- Specific Comment #18: NASA will confirm that FSAP-OU3 is consistent with the final version of the QAPP on all items listed in comment #18.

- Specific Comment #19: Table 6-5, Summary of Analyses for Composite Samples of Soil Cuttings and Samples of Drilling Fluids. EPA suggests the alternative of either testing the drilling mud with pH paper to check for proper pH or forego preservation altogether. NASA will forego preservation. This will be noted in the text.

  EPA requests that Table 6-5 include cyanide analysis by SW 9010 (or 335.3), a holding time of 14 days, a 1000-ml polyethylene bottle, and preservation with NaOH to pH greater than 12. NASA agrees.

- Specific Comment #20: Section 7.2, Sample Transport and Custody, page 25: EPA suggests that COC forms specify the sample preservation used and identify the QC samples. NASA agrees to identify the sample to use for matrix spike analyses on the COC form.

- Specific Comment #21: Section 8.0, Selected References, p. 28: EPA requests that the references included EPA 1983, *Methods for Chemical Analysis of Water and Wastes*, EPA 600/4-79-020, Revised March 1983 and EPA 1988, *Methods for the Determination of Organic Compounds in Drinking Water*, EPA 600/4-88/039, December 1988. NASA agrees to make these additions.

DTSC Comments:

- Specific Comment #1: The typographical errors on pages vi and 2 will be corrected.

- Specific Comment #2 and #3: DTSC questioned the need for MW-17 and the rationale for the location of MW-18. Buril explained that MW-17 is placed to determine the vertical extent of contamination and MW-18 is placed to determine the northern boundary of the plume based on the continuing clean results from MW-1 and MW-9 and the boundary effect of the fault to the north of MW-18.

  Buril further explained that the City of Pasadena production wells in the Arroyo have not had hits above action levels in recent months. Lincoln Avenue has not shared their water analysis results with NASA for several months. Buril is not aware of any contamination being detected in Las Flores or Rubio Canyon Water Company wells.

It was concluded that NASA cannot control the timing or extent of pumping at municipal wells. NASA will, however obtain records from the City of Pasadena regarding the pumping schedule of the wells so that this may be considered during analysis of the sampling results.

NASA will obtain information from Caltech's seismological department to extend the thrust fault beyond JPL's boundaries.

Wording will be included in the text to indicate that contamination has been detected in the Lincoln Avenue water wells.

NASA acknowledged that it may be necessary to install step out wells if contamination is detected in the currently planned wells for OU-3.

Clearer rationale regarding the placement of wells will be included in the document. This wording will be coordinated with the State prior to the 28 February due date for FSAP-OU3 and the response document.

- Specific Comment #4: Page 6, third bullet: The typographical error in the first sentence will be corrected by changing "west" to "east."

- Specific Comment #5: Page 7, first bullet: DTSC requests a description of the structural geology beneath OU-3 that causes the depth variation of the crystalline basement. (The other wells in the area are located at 750 ft. bgs or shallower. The depth for MW-20 is 925 ft.) NASA's response is that the rationale is based on information from a USGS survey--there is no other information available. NASA will send a copy of the USGS reference to the agencies.

- Specific Comment #6: Page 7: DTSC requests a description of the investigation of the area to the west and south of JPL. If MW-21 will be used to evaluate groundwater flow into the study area from La Canada-Flintridge, they ask how NASA will show that it is not the original source of the contamination when reversal in the direction of groundwater flow has occurred. Buril indicated that modeling should provide some answers. Decisions about further wells or sampling cannot be made until the initial well is evaluated.

- Specific Comment #7: Page 13, Section 6.1.1, Well Permit Requirements: DTSC recommends that the permits that are required for off-site access should be obtained well in advance to avoid delays in the sampling events. NASA

acknowledges that concern and has been getting these necessary permits. Schutz noted that a previous EPA comment that obtaining permits is not required for work to progress at a Superfund site was in error. Permits must be obtained for the off-site wells. Stralka stated that an agreement with the watermaster would be required to operate a treatment well. Schutz encouraged NASA to keep communicating with the Department of Public Works and/or the City of Pasadena and to consider holding public meetings.

- Specific Comment #8: Page 20, Section 6.2.2, Westbay Sampler Decontamination. DTSC indicates that the Teflon tubing should be decontaminated when sampling between different depths within the Westbay well to avoid cross contamination. This is NASA's intent. The texts will be reworded to clarify this fact.

- Specific Comment #9: Page 22, Section 6.2.5, Collection of GW Samples, paragraph 2. DTSC asks that if the sample container is not filled completely when checking for headspace in the sample to be analyzed for VOCs, then the sample should be discarded and a new sample collected. This will be clarified in the text. Nakashima commented that once previously a sample container was topped off by adding water, and that this action invalidates the sample. Novelly noted that this error was discussed with the sampling team.

- Specific Comment #10: Page 23, Section 6.3.1. Data Quality Objectives, top of page. IDW will be handled according to guidelines. The 90-day storage limit will apply only if the material is hazardous. Also, during the time that the containers are stored off-site, NASA must implement security measures so that the public does not have access to the IDW. Buril notes that locking bins or security at the drill rig will be considered. Security of the equipment is usually handled by the driller, but NASA will add this stipulation to the contract in the procurement specs.

LARWQCB Comments:

Specific Comment #1: Page 12, Section 6.1.1. RWQCB recommends that the word "may" be changed to "will" to address the RWQCB's concern that JPL adequately coordinate activities with the City of Pasadena for optimum protection of the basins and spreading grounds. NASA will notify the City of Pasadena, Public Health Department, Environmental Health Division concerning proposed off-site field activities. However, permission to proceed is not required.

4. TOPIC: Status of RPM Meeting Minutes

Huff stated that the revised minutes for December 1992 through May 1993 went out to the agencies on November 23, 1993. The agencies agreed that as long as comments had been incorporated, no further review is necessary. Buril is still working on the August minutes.

5. TOPIC: Update on January Soil Gas Sampling

All soil gas locations were sampled. Preliminary results show readings in the non-detect ppb range.

The two deep nested soil vapor probes will not be installed until additional information from soil borings is gathered.

Action: Buril will notify the agencies when soil gas data is ready for review.

DTSC asked if further soil vapor sampling would be performed. Sampling in a grid pattern was suggested. It was decided that this decision could not be made until the data was reviewed.

6. TOPIC: Schedule for Next RPM Meeting

Two dates were reserved for the next meeting: February 24 and March 3. If the soil vapor data is given to the agencies for review by February 19, the meeting will be held on March 3. If the data is available earlier, the meeting will be held on February 24.

7. TOPIC: Risk Assessment

Stralka explained EPA's approach to the baseline Risk Assessment. Two methods can be used for this:

1. The highest hit is used for the 30-year worst-case analysis. (This is the most health protective.)

2. The average concentration is taken across the plume. (The edges of the plume are defined as non-detect.)

EPA has recently been using the average of several of the highest hits. DTSC has usually used the highest hit, but has also used the average across the plume. The approach to be used is negotiated between the agencies on a site-by-site basis.

Decisions are based on the following three parameters:

- human health risk
- ecological affects
- ARARs

Regarding ranges for cancer risk, Stralka stated that at 10^{-4}, the site will definitely require action. In the 10^{-6} to 10^{-4} risk, the nine criteria listed in the NCP will also be taking into account.

Schwarthout stated that of the nine criteria, divided into three categories, the site must satisfy ARARs and must protect human health and the environment.

Stralka noted that ecological risk assessments are much more complex than human health risk assessments because of the multitude of potential exposure pathways. EPA recommends that the ecological assessments be conducted in phases in order to control level of effort.

NASA has already confirmed that contaminants exceed ARARs at the highest location. This should be documented. NASA would now move into the next stage of using averages over plume and evaluating chemical specific exposures.

Schwarthout would expect NASA to incorporate OU-1 and OU-2 RI data in the OU-3 document by reference. This will then be used for the Baseline Risk Assessment.

Action: Buril will create an outline for the next meeting on how the RA will be set up. Schutz suggested bringing in an RA expert from Ebasco or whoever is going to write it up, to meet with Stralka. A draft of the outline will be coordinated with the regulators prior to the meeting for review.

8. TOPIC: Status of Previous Meeting Action Items

Previous Action Item #1: The replacement pages for the CRP will be transmitted to the EPA by 24 November.

Status: Closed

New Action: Send revised pages.

Previous Action Item #2: The QAPP is due to the EPA by 24 November. JPL will provide two (2) copies of the replacement pages, with one copy having the responses to EPA comments highlighted or underlined. The agencies will take until 6 December, then if all comments have been addressed, will state that QAPP, HASP, and CRP are final. At that time JPL will also provide final cover sheets with a December 1993 cover date.

Status: Closed, except for replacement pages.

Previous Action Item #3: Schutz will check to see if it is acceptable to use the phrase "minimum detection limit" rather

than "action Level" in the Appendix of the QAPP. She will also check to see whether the agency views these numbers as desirable minimum detection limits or as potential cleanup levels. She will get back to Buril by Tuesday.

Status: Closed.

Previous Action Item #4: Niou will check to see if it is acceptable to use the matrix spike percent recovery equation that the EPA stipulated in its comments to revolve solely around inorganic recoveries and will respond to EPA.

Status: Closed.

Previous Action Item #5: Schutz will meet with EPA's risk assessment people to determine if filtered samples for metals analysis will be acceptable and will get back to Buril.

Status: Closed.

Previous Action Item #6: Schutz will check on detection limits for alkalinity, and will get back to Buril by Tuesday. All FSAPS must be changed to reflect the 7-day holding time.

Status: Closed.

Previous Action Item #7: The FSAP for OU-1 will be due on 1 December 1993.

Status: Closed.

Previous Action Item #8: Schutz will send a letter in early December with comments for the FSAP OU-3. The State will have comments by the 28 December due date.

Status: Closed.

Previous Action Item #9: Schutz and Nakashima will discuss next week the acceptability of using the October sampling for the dry season. Schutz will find out why another EPA site discontinued use of Grundfos pumps. Buril agreed that the next time a sample is done, 3 or 4 wells will use the low-rate/high-rate sample analysis and results will be compared.

Status: Open.

New Action: Brian will find out why OII, another EPA site, discontinued use of Grundfos pumps.

Previous Action: The next RPM meeting will be held on 12 January 1994, at JPL. Any validated data available will be reviewed.

Status: Complete.

Previous Action: FSAP for OU-3 comments will be discussed at the 12 January 1994 RPM meeting.

Status: Complete.

Previous Action: Schutz and Nakashima will discuss the issues surrounding the agencies' request that NASA collect soil samples during drilling for groundwater well installation with their managements and respond to Buril by Tuesday. They will also indicate what sampling frequency would be sought and which wells would need to be sampled, if sampling is required.

Status: Complete.

Previous Action: Buril will ask the Raymond Basin Management Board to provide ranges of contaminants found in city and municipal wells.

Status: Open. Buril has made that request. The response has not yet been received.

Previous Action: Schutz will provide comments on FSAP-OU2 and the Work Plan next week. FSAP OU-2 comments are due from the agencies on 22 November 1993. Agency comments on the Work Plan are due on 29 November 1993. Schutz will send a letter giving JPL a set time period in which to provide the agency with a delivery date for the revised pages. (Buril noted that the 7-day reply time did not allow project management sufficient time to approve changes)

Status: Complete per EPA.

New Action: Nakashima to respond. JPL will adjust timeline if State requires.

Previous Action: The EPA agencies will be given the field drilling schedule at least 10 days in advance.

Status: Closed.

Previous Action: The agencies will allow the old data to be used for screening, providing it correlates with the new, validated data.

Status: Complete.

Previous Action: Schutz will provide examples of evaluations of future potable/industrial uses of groundwater that were done in cases where those uses were unlikely to occur in the future.

Status: Schutz indicates that this should be based on the Risk Assessment, which will look at both industrial and residential usage.

Previous Action: The use of dual wall air percussion in addition to soil vapor probes was agreed upon as being a method that would allow borings to be installed with minimal impact on sample quality. Buril will discuss with NASA. Dual wall air percussion is the method currently planned.

Status: Closed.

Previous Action: Schutz will check with EPA management to verify if it is necessary to have another consultant validate the data. Schutz will check on whether Ebasco can be considered a third party and will respond to Buril.

Status: Done, per NASA.

Previous Action: JPL will contact the City of Pasadena to determine if an MOU regarding the DGMUP and JPL CERCLA can be reached. Several contacts have left. And according to the latest Raymond Basin Management Board Meeting, the spreading basins will be operational in the summer or fall of 1995.

Status: Buril reports that he has continued his attempts to make progress but that none has been made.

9. TOPIC: Other Items

Schutz cautioned that as the documents go final, there may be data gaps which can be filled in an addendum to the plan. The agencies will be consulted for consensus. An accelerated review process was recommended.

Schutz expressed concern about logjams that result pertaining to RAs with RI. She urges JPL to keep the agencies informed because first RI for first operable unit is due 29 September 1994. Buril suggests holding more frequent meetings by phone to allay Schutz concerns. Schutz reminded JPL to stay in contact with Eco Risk assessors.

The following is a summary of **ACTION ITEMS** assigned at today's meeting:

1. Replacement pages for the Community Relations Plan will be transmitted to EPA by 01/26/94.

2. Nakashima will check on the status of the Work Plan and report her findings to Buril by 01/20/94.

3. Nakashima will check on the status of FSAP-OU2 and report her findings to Buril by 01/20/94.

4. Nakashima will check on the status of the HASP and report her findings to Buril by 01/20/94.

5. Buril will discuss the option of running more sieve analyses with NASA and report his findings to Schwarthout.

6. Buril will explore ways to clarify well screen placement for the public and will get back to EPA with suggested wording.

7. NASA will provide a rewrite to clarify that well screens are not actually shifted within the well bore, but, rather, that any "shifting" of screen location or spacing takes place on paper only.

8. LARWQCB will fax written guidance, if such guidance exists, specifying grout thickness and placement for multi-port groundwater monitoring wells. Also, Buril will meet with EBASCO and NASA to do a cost and schedule analysis of using grout in all blank casing areas and will get back to EPA within two weeks.

9. Buril will notify the agencies when soil gas data is ready for review.

10. Replacement pages for the CRP will be transmitted to the EPA by 26 January.

11. Swarthout will find out why OII, another EPA site, discontinued use of Grundfos pumps.

12. Nakashima will call Buril regarding status of FSAP OU-2.

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